Surface zooplankton community along 110°E in the Southern Ocean during austral summer 2013

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To investigate surface zooplankton community abundance and composition at surface layer, the water from underway pump was concentrated by using a hand net (20 µm mesh) along 110°E during Umitaka maru cruise (UM13-09) in January 2013. Zooplankton abundance highly varied along the transect, ranged from 3.4-23672.6 ind. m^{-3} (Fig. 1). Higher abundaces (>10000 ind. m^{-3}) were found 53.7-57.5°S, where small copepod *Oithona* spp. was predominant (Table 1). On the other hand, lower abundances were mainly found in seasonally sea ice zone. No clear pattern between abundance and sampling time suggests that near surface zooplankton abundance in this study was affected by rather distribution of water masses than their diel vertical migration. At the southern most station, where ice edge phytoplankton bloom occurred, *Stephos longipes* was dominant species (Table 1). This species is known as a typical sea ice associates. These results were well consistent with previous reports on small zooplankton taxa by vertical tows using finer mesh nets. Therefore, we conclude that zooplankton collection from underway pump by using a fine mesh net is useful for zooplankton monitoring. Since it is not necessary for ship-time for the present methods, simultaneous observation by using CPR and underway waters would give us more accurate understanding on zooplankton distribution and the long-term variation.

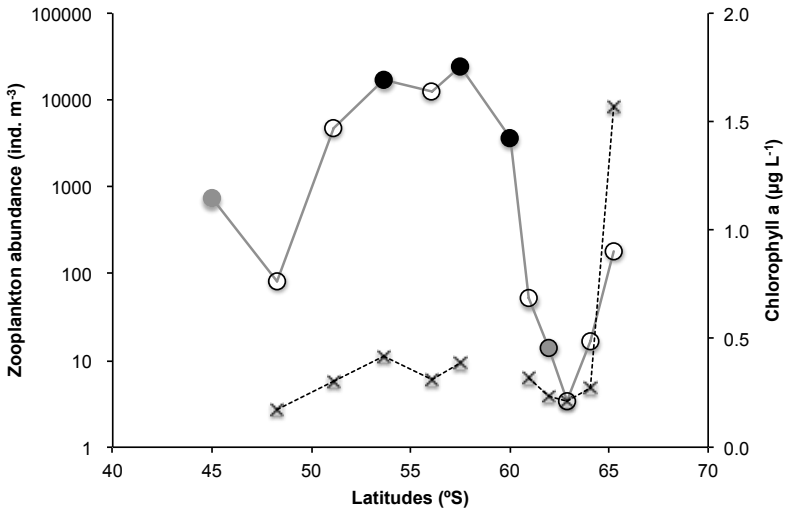

Fig. 1. Zooplankton abundance (circle) and chlorophyll *a* concentration (cross) Along 110°E. Each sampling time of the day was shown open (day), dark (night) and gray circle (dusk), respectively.

Table 1. Contribution of dominant zooplankton taxa in 12 samples collected along the 110°E.

45.0°S	%	48.3°S	%	51.1°S	%	53.7°S	%
Oithona spp.	97.0	*Limacina* spp.	67.9	*Oithona* spp.	66.3	*Oithona* spp.	50.1
		Oithona spp.	26.8	*Limacina* spp.	8.4	*Limacina* spp.	14.7
				Appendicularian	7.0	*C. similimus*	13.7
						C. citer	13.4

56.1°S	%	57.5°S	%	60.0°S	%	61.0°S	%
Oithona spp.	96.0	*Oithona* spp.	86.1	*Oithona* spp.	61.1	*Oithona* spp.	85.2
		C. citer	6.1	Appendicularian	38.2		

62.0°S	%	62.9°S	%	64.1°S	%	65.3°S	%
Appendicularian	33.3	*L. helicina*	50.0	*Limacina* spp.	42.9	*S. longipes*	37.4
C. acutus	16.7	Appendicularian	50.0	Appendicularian	35.7	*C. acutus*	32.7
Microsetella spp.	16.7			*L. helicina*	7.1	*Oithona* spp.	15.9
Other harpacticoids	16.7			*L. retroversa*	7.1	Other harpacticoids	5.6
Euphausiids	16.7			*Fritillaria* spp.	7.1		